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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2009-1228; Directorate Identifier 2009-NM-015-AD; Amendment 39-16666; AD 2011-09-04]**

**RIN 2120-AA64**

**Airworthiness Directives; Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires repetitive inspections for any damage of the lower surface of the center wing box, and corrective actions if necessary. This AD was prompted by reports of fatigue cracks of the lower surface of the center wing box. We are issuing this AD to detect and correct such cracks, which could result in the structural failure of the wings.

**DATES:** This AD is effective June 22, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of June 22, 2011.

**ADDRESSES:** For service information identified in this AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, Georgia 30063; telephone 770-494-5444; fax 770-494-5445; e-mail [ams.portal@lmco.com](mailto:ams.portal@lmco.com); Internet <http://www.lockheedmartin.com/ams/tools/TechPubs.html>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document

Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, Georgia 30337; phone: (404) 474-5554; fax: (404) 474-5606; e-mail: Carl.W.Gray@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That NPRM published in the Federal Register on January 5, 2010 (75 FR 262). That NPRM proposed to require repetitive inspections for any damage of the lower surface of the center wing box, and corrective actions if necessary.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

### **Support for the NPRM**

Lockheed Martin Aeronautics Company (LM Aero) recognized and agreed with the need to adopt an AD. Lynden Air Cargo (LAC) agreed in concept that the inspections in the NPRM are beneficial and enhance safety.

### **Requests To Clarify Paragraph (l) of the NPRM**

LAC and Safair Operations (Pty) Ltd (Safair) asked that we clarify paragraph (l) of the NPRM, which states that "Inspections accomplished before the effective date of this AD in accordance with Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, dated August 22, 2006, including Appendix B, dated March 18, 2005, are considered acceptable for compliance with the corresponding action specified in paragraph (g) of this AD." The commenters pointed out that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, refers to Appendix A, rather than Appendix B, of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1. The commenters asked if the reference to Appendix B is a typo and, if not, why we consider Appendix B of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, as an acceptable means of compliance with the actions specified in paragraph (g) of the NPRM. The commenters pointed out that neither Appendix A nor Appendix B of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, is an acceptable means of compliance for the whole AD.

We agree to clarify paragraph (l) of the NPRM. There are no corresponding actions in this AD for the inspections in Appendix B of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1; the inspection in Appendix B of Lockheed Service Bulletin 382-57-83 (82-783) and the inspections in Lockheed Service Bulletin 382-57-85 (82-790) are different. We refer to Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, as the appropriate source of service information for doing the actions in this AD. Therefore, paragraph (l) of the NPRM does not provide any credit for any of the actions in paragraph (g) of the AD and, as a result, we have removed paragraph (l) of the NPRM.

Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, does refer to Appendix A of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, for guidance about performing part of the

actions required by this AD—in this case, the non-destructive test of the center wing lower surface panels at the rainbow fittings. The reference in Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, to Appendix A of Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, is correct and provides sufficient guidance for operators to perform the non-destructive test of the center wing lower surface panels at the rainbow fittings.

### **Requests for Clarification of Credit for Various Revisions of Service Information**

LAC and Safair requested that we clarify which revisions of Lockheed Service Bulletin 382-57-85 (82-790) are acceptable for compliance with the actions proposed in the NPRM.

LAC noted that there are some minor differences between revisions of Lockheed Service Bulletin 382-57-85 (82-790) that have a negligible effect on the intent of the proposed AD and stated that there are no compelling safety reasons that would justify re-accomplishment of that service bulletin before the next inspection period. LAC requested that, if compliance with earlier revisions of that service bulletin is not acceptable, we capture the cost of re-inspections in the cost estimate. LAC also stated that although it accomplished Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005, it removed the wing attach angles to facilitate the inspection and then installed new attach angles even before this action was specified in later revisions of that service bulletin.

Safair stated that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, is apparently not currently FAA-approved, although Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005, appears to be.

Safair also requested clarification about what is meant in the Compliance paragraph (paragraph (f)) of the NPRM, which states "unless the actions have already been done." Safair stated that it is unclear which revision of Lockheed Service Bulletin 382-57-85 (82-790) would satisfy having "already been done." Safair also noted that in Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005, the drag angle (wing attach angle) is not removed, and Safair asked if any credit would be given for having performed the (other) actions in that service bulletin.

We agree with the requests to clarify which revisions of the service information are acceptable for compliance with the requirements of this AD. Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, has been approved by the FAA. Lockheed Service Bulletin 382-57-85 (82-790), Revision 1, dated March 8, 2007, has also been approved by the FAA, and is acceptable for doing the inspections required by this AD if done before the effective date of this AD.

Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005, is also acceptable for compliance with inspections required by this AD, if the actions in that service bulletin are done before the effective date of this AD.

The phrase in paragraph (f) of this AD, "unless the actions have already been done," refers to requirements of the AD that have been done before the effective date of the AD. For example, if, before the effective date of the AD, an operator performed an inspection in accordance with Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005; Revision 1, dated March 8, 2007; or Revision 2, August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007; that operator would be in compliance with the intent of the AD for that inspection; however, all inspections done after the effective date of the AD must be accomplished in accordance with Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007.

We have added new paragraphs (l) and (m) to this AD to give credit to operators that have accomplished the actions required by paragraph (g) of this AD using Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005; or Revision 1, dated March 8, 2007.

## **Requests To Revise Costs of Compliance**

Safair suggested that we revisit the Costs of Compliance section, which lists only work-hours and appears to have ignored the material and loss of earnings due to extended downtime. LAC also stated that the section should be revised to address fixed costs that continue to accrue while the airplane is down. LAC also pointed out that the costs beyond the 2,000 work-hours specified in the NPRM for the inspection are another 1,000 to 3,000 work-hours for defect rectification, cold working, angle replacement, reassembly, and restoration. LAC stated that part and material costs, including replacement wing attach angles and fasteners, are approximately \$30,000 per airplane. LAC estimated that the average maintenance costs to comply with the actions proposed in the NPRM would be \$350,000 per airplane, per inspection cycle.

We partially agree with the commenter's requests to change the costs of compliance. We disagree with the requests to address the costs of extended downtime. We included a grace period in this AD so that the effect on operations would be minimized and the inspections could be scheduled during regular maintenance checks. We have not changed the Costs of Compliance in this regard. We agree with the request to include the costs for the corrective action (defect rectification, etc.). Since we issued the NPRM, FAA policy has been revised to allow for inclusion of on-condition costs (e.g., costs that depend on inspection findings). Therefore, we have added a table in the Costs of Compliance section of this AD that includes an estimate of the cost of the corrective actions.

## **Requests To Differentiate Inspection Intervals for Different Fasteners**

LM Aero believed that there should be a differentiation between the repetitive inspection intervals for Taper-Lok fastened joints (original production configuration) and the inspection intervals for Hi-Tigue fasteners installed in cold-worked holes. LM Aero pointed out that this differentiation is outlined in Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007 (10,000-flight-hour re-inspection for Taper-Loks and 20,000 flight hours for Hi-Tigues in cold-worked holes). LM Aero stated that the installation process for Hi-Tigue fasteners removes small fatigue cracks that are below the detection threshold for the bolt hole eddy current inspection, and is effective in retarding the growth of very short fatigue cracks, which could remain in the structure after inspection and over-sizing. LM Aero added that this allows the post-inspection flaw size to be set to 0.05 inch and that the post-inspection flaw size for Taper-Lok fasteners is set to 0.15 inch, which results in a shorter repetitive inspection interval. LM Aero stated that not acknowledging this improvement in terms of an increase in recurring inspection intervals would limit, if not end, an operator's consideration of this life-enhancing repair fastener system for aircraft. LM Aero believed operators that invested in Hi-Tigue fasteners should be compensated by allowing a repetitive interval of 20,000 flight hours.

LM Aero also stated that the implementation of the widespread fatigue damage (WFD) rule, FAA-2006-24281 (75 FR 69746, November 15, 2010), would require that a life limit be developed for the center wing, which would dictate the number of times that the inspections proposed in the NPRM could be used to maintain safety of flight. Airplanes exceeding the life limit would not be considered airworthy until an approved WFD repair is installed.

LAC agreed with the LM Aero comment. LAC did not agree that all holes should be inspected at the 10,000-flight-hour interval and added that repeated removals create the potential for insufficient remaining edge distance for the fasteners, as the hole clean-up might require fastener oversize. LAC stated that it has found that some fasteners are already approaching minimal edge distance even after the first fastener removal and replacement, especially if the Taper-Lok fasteners have been replaced with Hi-Tigue fasteners. LAC asserted that repeated and unnecessary fastener removals will make complicated repairs necessary and possibly lead to early replacement of structural components, up to and including replacement of the center wing itself. Safair also notes that with a reduced interval for cold-worked holes, the edge distance will be exhausted and the center wing will be scrapped.

We partially agree with the requests to differentiate the repetitive inspection intervals. We agree that those operators that invested in the Hi-Tigue fastening system in cold-worked holes should be given credit for their efforts by allowing a longer repetitive inspection interval. We disagree with revising this AD to include additional compliance times because the compliance times will vary for each airplane depending on how many holes in the center wing have been cold worked and have had Hi-Tigue fasteners installed. We do not consider it appropriate to include various provisions in an AD applicable only to individual airplanes. However, operators should note that under the provisions of paragraph (n) of the final rule, we will consider requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety. We will consider requests for approval of alternative methods of compliance (AMOCs) on a case-by-case basis to address cold-worked holes and installation of Hi-Tigue fasteners in affected areas of the airplane.

We also acknowledge that the WFD rule specifies that airplanes exceeding the WFD life limit would not be considered airworthy until an approved WFD repair is installed. We point out, however, that since this AD contains inspection requirements for detection of generalized fatigue cracking and possible onset of WFD, extending the repetitive interval any longer could jeopardize the safety of the airplane. While we agree that repeated fastener removal could lead to complicated repairs and early replacement of structural components, this replacement would likely occur anyway as a result of the WFD that is known to exist in the inspection area. We have not changed the AD in this regard.

### **Requests To Extend Inspection Threshold in Paragraph (g)(2) of the NPRM**

Safair and LAC requested that we extend the compliance time of "within 365 days" specified in paragraph (g)(2) of the NPRM. LAC stated that 365 days is not adequate to plan for and execute the proposed requirements of the AD and suggested the compliance time be changed to "within 48 months." Safair stated that 365 days is too restrictive and is not in line with maintenance recommendations of the original equipment manufacturer for structural work. Safair added that unscheduled maintenance visits would drive up cost and requested that the compliance time be revised to "at the next 3 year or 6 year structural inspection."

We disagree with the request to extend the compliance time specified in paragraph (g)(2) of this AD. In developing an appropriate compliance time for this AD, we considered not only the safety implications, but the manufacturer's recommendations, the availability of required parts, and the practical aspect of accomplishing the modification within an interval of time that corresponds to typical scheduled maintenance for affected operators. The 365-day compliance time reduces the impact on airplanes that have exceeded the thresholds specified in paragraph (g) of this AD and maintains an adequate level of safety of the airplane. Because of the possible onset of widespread fatigue damage of the center wing lower surface structure, any further extension of the compliance time could jeopardize safety. Under the provisions of paragraph (n) of this AD, however, we may consider requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety. We have not revised this AD in this regard.

### **Request To Clarify Exceptions to the Service Bulletin**

LAC stated that paragraph (i) of the NPRM and the requirements of an AMOC are redundant, and that if paragraph (i) of the NPRM is an exception, then the NPRM should allow the exception without an AMOC process.

We infer that LAC is requesting clarification of the exception to Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, as specified in paragraph (i) of this AD. Paragraph (i) of this AD clarifies that the AD requirements are different from those specified in Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D,

E, F, and G, all Revision 1, all dated March 8, 2007. Specifically, paragraph 1.B.(5) of Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, specifies that an extension of the compliance period can be addressed by completion of an evaluation form in another service bulletin. Paragraph 1.B.(5) of Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, indicates that repetitive intervals may be revised in a later revision of Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007. However, operators must comply with the compliance times and inspection methods specified in this AD. Paragraph (i) of this AD explains that if operators want to use different intervals or inspection methods, they must request an AMOC.

### **Request To Clarify and Justify FAA Approval of Repairs**

Safair requested clarification of the requirement in paragraph (h) of the NPRM to do repairs in accordance with a method approved by the FAA, Atlanta Aircraft Certification Office (ACO). Safair asked if the Atlanta ACO would provide rapid approval of proposed repairs. Safair asked if FAA Designated Engineering Representative (DER)-developed repairs may be submitted via the Atlanta ACO. Safair also stated it assumed that structural repair manual (SRM) repairs in the affected areas would still be approved repairs.

LAC requested justification of the requirement in paragraph (h) of the NPRM to do repairs in accordance with a method approved by the Atlanta ACO. LAC stated that requiring ACO approval for repairs is an excessive regulatory burden and will likely result in excessive downtime for an airplane. LAC noted that it accomplishes repairs 24 hours a day and 7 days a week and utilizes FAA DERs. LAC further stated that the repairs in the SRM are already FAA-approved, and there is no benefit to requiring additional ACO approval.

We acknowledge the commenters' concerns with requiring repairs to be approved by the Atlanta ACO. If operators notify the FAA immediately when a crack is found during an inspection, the FAA should have adequate time to respond. Operators also should contact Lockheed Martin with any finding, and work with it or the DERs to develop a repair to support the request for approval of an AMOC. The sooner the operator can provide us with the recommended repair, whether developed with Lockheed Martin or DERs, the sooner we can review it and approve it. If we find an issue with the proposed repair, we will notify the operator as soon as possible to resolve the issue and to limit potential airplane downtime. We have not changed the final rule in regard to this issue.

Regarding SRMs, the structural repair manual is accepted by the FAA, but is not FAA-approved, and may be changed in future revisions. In many instances, the Lockheed 382 SRM repairs did not take into consideration WFD. This SRM also does not include repairs for all areas of the center wings inspected as required by this AD. Also, since any new repairs might prevent the repair areas from being inspected as required by this AD, new inspections will have to be developed for the affected areas with new inspection intervals that have to be approved by the Atlanta ACO. We have not changed this AD in this regard.

### **Request for Reports**

LAC requested that we include the reports referred to in the "Differences Between the Proposed AD and Relevant Service Information" section of the NPRM in the public docket. LAC asked what reports we referred to when we specified that "reports indicate that fatigue cracks are of sufficient size and density, requiring a shorter compliance time."

We do not agree to add reports to this AD or the public docket. There have been several accidents related to Model C-130A airplanes in which the wings separated from the airplane in flight as a result of fatigue cracks in the center wing. This information is available in National Transportation Safety Board reports. In addition, the military services have also had similar accidents on their Model C-130 airplanes. Also, there are service difficulty reports on the Model L-382 commercial fleet that are available on the FAA Web site.

We have determined that existing inspections did not adequately address areas related to widespread fatigue damage that were often buried under existing structures. The reports we referred to are publicly available and are not reproduced in this AD. We have not revised this AD in this regard.

### **Request To Require Reporting**

Lockheed requested that we revise paragraph (k) of the NPRM to require reporting instead of specifying that no reporting is required. Lockheed stated that it requires service data to properly maintain the flight safety of the Model 382 airplanes.

We do not agree to add a reporting requirement to this AD. Adding an additional requirement would further delay the publication of this AD because we would need to issue a supplemental NPRM. To delay this action would be inappropriate, since we have determined that an unsafe condition exists and that inspections must be conducted to ensure continued safety. We acknowledge the importance of operators reporting findings to the manufacturer and encourage operators to report findings, as specified in Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007. We have not changed this AD in this regard.

### **Request To Allow Credit for Actions Done per Structural Maintenance Plan (SMP) Cards**

LAC requested that we give credit for accomplishment of Lockheed SMP515-C cards SP-216 (for Appendix A, if applicable) and/or SP-217 (for Appendix B, if applicable). LAC states that Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, dated August 22, 2006, contains a provision for this.

We do not agree. As stated previously, Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, dated August 22, 2006, including Appendix B, dated March 18, 2005, is not acceptable for credit for actions required by this AD. The corresponding SMP cards referenced in Lockheed Service Bulletin 382-57-83 (82-783), Revision 1, dated August 22, 2006, including Appendix B, dated March 18, 2005, also do not correspond to the actions required by this AD. We have not changed this AD in this regard.

### **Request To Revise Public Comment Period**

LAC requested that we allow a 60-day comment period for NPRMs. LAC stated that this NPRM had only a 45-day comment period and that Executive Order 12866 specifies that in most cases the public comment period on any proposed regulation should be "of not less than 60 days." LAC stated it did not see a justification for this NPRM to have a reduced comment period.

We do not agree with the commenter's request to extend the comment period. While Executive Order 12866 does not specifically require a 60-day comment period for AD actions, the FAA has established a standard 45-day comment period for AD actions issued as NPRMs. In addition, the Administrative Procedure Act does not prescribe a specific amount of time for comment periods. We have not revised this AD in this regard.

### **Request To Consider Significant Economic Impact of the NPRM**

Safair and LAC requested that we consider the significant economic impact of the NPRM. Safair stated that the NPRM would have a significant impact on the ability of non-governmental organizations to deliver aid and relief. LAC stated that the NPRM could be considered to have a significant economic impact on a number of small entities. LAC stated the inspections would cost \$350,000 per inspection and, therefore, would cost \$2,100,000 over the life of an airplane, based on 10,000 work-hours per inspection. LAC noted the total cost for U.S. operators would be \$31,500,000.

We note that the numbers provided by LAC are higher than those specified in this AD (this AD specifies costs of \$160,000 per airplane and \$2,400,000 for the U.S. fleet). The work-hour estimate in this AD is 2,000 work-hours, based on the estimate from the manufacturer. LAC's work-hour estimate is considerably higher than the manufacturer's estimate. In addition, LAC's estimate for the life of an airplane is unlikely since most airplanes will not operate close to 100,000 flight hours. We have not revised this AD in this regard.

Additionally, we are aware that some of the civilian operators use their Model 382 airplanes for aid and relief missions, and we do not intend to interfere with those missions. However, this AD addresses an identified unsafe condition by requiring repetitive inspections to detect damage, including fatigue cracking, of the lower surface of the center wing box. This type of damage is a significant safety issue, and we have determined that the inspection threshold and repetitive intervals are warranted. The inspection threshold does include a grace period for the initial inspections in paragraph (g)(2) of this AD to allow operators additional time to coordinate the initial inspections. We have not changed this AD in this regard.

### **Request To Consider Military Data**

Safair asked whether the FAA was aware of the Model 382 civilian fleet hours and cycles, as opposed to the military Model C-130 fleet status. Safair also noted that the data collected by the military is "readily transferable to the more sedately operated civilian version of the airplane."

We are aware of the data for both military and civilian versions of the airplane. We developed the compliance times in this AD to address the identified unsafe condition on the civilian Model 382 airplanes. We have not revised this AD in this regard.

### **Request To Revise Service Bulletin To Address Flight Hours**

Safair requested that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, be revised to specify flight hours for civilian airplanes. Safair stated that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, refers to equivalent baseline hours (EBH) and not flight hours, while the NPRM refers to flight hours.

We disagree with the commenter that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, needs to be revised. The compliance times in this AD require compliance within the specified flight hours. Operators should not refer to Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, for compliance times. Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, refers to EBH to distinguish between military usage and commercial usage. EBH is the baseline used in the analysis of the data. The results of an investigation showed that civilian usage and military usage were very similar and, therefore, correspond one-to-one. Operators should note that under the provisions of paragraph (n) of the final rule, we will consider requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety. Operators are advised that an extension of the compliance times of this AD may be initiated by completing a Lockheed Martin operation usage evaluation and submitting it to the Atlanta ACO. We have not revised this AD in this regard.

### **Request To Clarify How Existing Repairs Are Addressed**

LAC asked how existing repairs would be addressed if the NPRM is adopted as proposed.

We agree to provide clarification. Operators do not need to get approval from the Atlanta ACO for repairs done before the effective date of this AD. However, if an operator is unable to do an inspection required by this AD because of an existing repair, the operator must request approval of an AMOC to do the inspection. It should also be noted that all existing repairs will be evaluated during audits required by the Aging Aircraft Safety Rule, FAA-1999-5401, effective March 4, 2005 (70 FR



5518, February 2, 2005). [A correction of that rule was published in the Federal Register on May 6, 2005 (70 FR 23935).]. Any repair determined to be inadequate will have to be replaced with an FAA-approved repair that will require post-repair inspections. We have not changed this AD in this regard.

### **Request To Revise Flight Hour Reference**

LAC requested that we revise the reference to 22,000 flight hours in the "Differences Between the Proposed AD and Relevant Service Information" section of the NPRM. LAC noted that Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, specifies 20,000 flight hours for that compliance time.

We agree that 20,000 flight hours is the correct compliance time reference. However, the "Differences Between the Proposed AD and Relevant Service Information" section is not restated in the final rule. We have not changed this AD in this regard.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously—and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

### **Costs of Compliance**

We estimate that this AD affects 15 airplanes of U.S. registry. We also estimate that it will take about 2,000 work-hours per product to comply with inspection requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD for U.S. operators to be \$2,550,000, or \$170,000 per airplane.

We estimate the following costs to do any necessary corrective action that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need corrective action.

<b>On-Condition Costs</b>			
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Corrective actions	1,000 to 3,000 work-hours X \$85 per hour = \$85,000 to \$255,000	\$30,000	\$115,000 to \$285,000

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701: "General requirements." Under that section, Congress charges the FAA with

promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



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**2011-09-04 Lockheed Martin Corporation/Lockheed Martin Aeronautics Company:**  
Amendment 39-16666; Docket No. FAA-2009-1228; Directorate Identifier 2009-NM-015-AD.

**Effective Date**

- (a) This AD is effective June 22, 2011.

**Affected ADs**

- (b) None.

**Applicability**

(c) This AD applies to all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes, certificated in any category.

**Subject**

- (d) Air Transport Association (ATA) of America Code 57, Wings.

**Unsafe Condition**

(e) This AD results from reports of fatigue cracks of the lower surface of the center wing box. The Federal Aviation Administration is issuing this AD to detect and correct such cracks, which could result in the structural failure of the wings.

**Compliance**

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**Inspection**

(g) At the time specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD, whichever occurs latest: Do a nondestructive inspection of the lower surface of the center wing box for any damage, in accordance with Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007. Repeat the inspections thereafter at intervals not to exceed 10,000 flight hours.

- (1) Prior to the accumulation of 40,000 total flight hours on the center wing.
- (2) Within 365 days after the effective date of this AD.
- (3) Within 10,000 flight hours on the center wing box after the accomplishment of the service bulletin if done before the effective date of this AD.

Note 1: These inspection procedures supplement the existing Hercules Air Freighter progressive inspection procedures and previously issued Lockheed Martin service bulletins. After the effective

date of this AD, there are no inspection procedures in those documents that fully meet the requirements of this AD.

### **Corrective Action**

(h) If any damage is found during any inspection required by this AD: Before further flight, repair any damage using a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA. For a repair method to be approved by the Manager, Atlanta ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

### **Exceptions to the Service Bulletin**

(i) Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, specifies that operators may adjust thresholds and intervals, use alternative repetitive inspection intervals, and use alternative inspection methods, if applicable. However, this AD requires that any alternative methods or intervals be approved by the Manager, Atlanta ACO. For any alternative methods or intervals to be approved by the Manager, Atlanta ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

(j) Where Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, specifies that alternative repetitive inspection intervals may be used for cold-worked holes, this AD does not allow the longer interval. This AD requires that all cold-worked and non-cold worked holes be re-inspected at 10,000-flight-hour intervals.

(k) Where Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, describes procedures for submitting a report of any damages, this AD does not require such action.

### **Credit for Actions Accomplished in Accordance With Previous Service Information**

(l) Actions done before the effective date of this AD in accordance with Lockheed Service Bulletin 382-57-85 (82-790), Revision 1, dated March 8, 2007, are acceptable for compliance with the requirements of paragraph (g) of this AD.

(m) Actions done before the effective date of this AD in accordance with Lockheed Service Bulletin 382-57-85 (82-790), dated August 4, 2005, are acceptable for compliance with the requirements of paragraph (g) of this AD.

### **Alternative Methods of Compliance (AMOCs)**

(n)(1) The Manager, Atlanta ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

## **Related Information**

(o) For more information about this AD, contact Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, GA 30337; phone: (404) 474-5554; fax: (404) 474-5606; e-mail: Carl.W.Gray@faa.gov.

## **Material Incorporated by Reference**

(p) You must use Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Lockheed Service Bulletin 382-57-85 (82-790), Revision 2, dated August 23, 2007, including Appendixes A, B, C, D, E, F, and G, all Revision 1, all dated March 8, 2007, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, Georgia 30063; telephone 770-494-5444; fax 770-494-5445; e-mail [ams.portal@lmco.com](mailto:ams.portal@lmco.com); Internet <http://www.lockheedmartin.com/ams/tools/TechPubs.html>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on April 12, 2011.

Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.